

Traumatic Brain Injury

Prehospital personnel consider traumatic brain injury (TBI) one of the most serious and difficult challenges that responders encounter in the field, especially when the patient is a child. TBI is a serious health problem in the United States with almost two million injuries occurring each year, the majority of which are caused by traffic crashes, followed by gun shot wounds, falls and sports injuries. **It is the leading cause of death and disability in children and young adults.** The estimated impact of TBI in the United States each year is:

- Over 1 million people are treated and released from the hospital ED
- 230,000 people are hospitalized and survive
- 51,000 people die every year from brain trauma, often prior to hospitalization
- 80,000 individuals have serious, long-term disabilities.

TBI is a potentially treatable injury, and **providers of emergency medical services are a critical first link to improved outcome for the patient.** For example, a single episode of prehospital hypotension is associated with a doubling of mortality. Science has shown that specific appropriate actions in the field can make a big difference in preserving the injured brain, reducing in-hospital time and costs, and increasing the quality of life for those in recovery.

Brain Trauma Foundation

Brain Trauma Foundation (BTF) is a national non-profit organization founded in 1986 to improve the outcome of brain trauma patients through guideline development, education, quality improvement programs, and clinical research. BTF publishes evidence-based guidelines for diagnosing and treating brain trauma, and conducts training programs and seminars for medical personnel, from the neurosurgeon in the intensive care unit to the EMT at the scene of the injury. Information on the organization's programs and TBI in general may be found by visiting BTF's website: **www.braintrauma.org**.

BTF is accredited by the Accreditation Council for Continuing Medical Education and American Association of Critical Care Nurses to provide continuing medical education to nurses and physicians. This activity was planned and produced in accordance with ACCME/AACN essentials.

Brain Trauma Foundation

Improving the Outcome of Brain Trauma Patients Nationwide

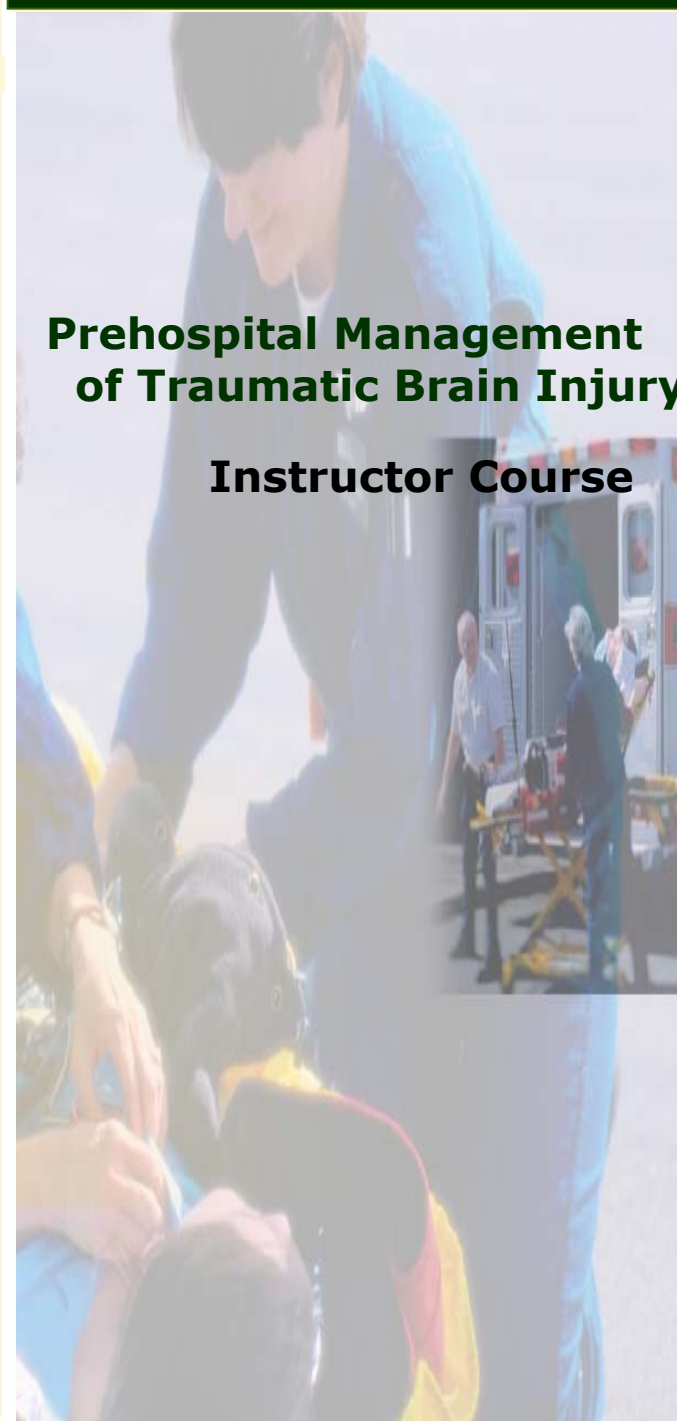
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Brain Trauma Foundation

Improving the Outcome of Brain Trauma Patients Nationwide

Prehospital Management of Traumatic Brain Injury

Instructor Course



EMS Traumatic Brain Injury Program

Supported by a grant from the National Highway Traffic Safety Administration (NHTSA), BTF is offering a program specifically designed to encourage the optimal management of traumatic brain-injured patients in the prehospital environment. Aimed at all levels of prehospital providers, the program includes an eight-hour Instructor Course, a four-hour Provider Course and a variety of teaching aids.

A rigorous process was involved in developing the prehospital training program:

- BTF developed the first scientific evidence-based *Guidelines for Prehospital Management of Traumatic Brain Injury* in 1998 ;
- Drafts were reviewed multiple times by a national group of EMS experts, representing all EMS specialties;
- The *Guidelines* were posted on the Internet for a year with comments carefully considered before final publication;
- Training and educational materials based on the *Guidelines* were field-tested at five pilot sites of diverse population size and geographical conditions;
- Feedback from the pilot testing was used to finalize the curricula;
- A national roll-out was initiated in 2000 in collaboration with State EMS offices and regional medical directors; and
- Course materials were updated in 2002 by BTF's national faculty based upon class comments and evaluations.

How the Program Works

BTF identifies a number of states each year to participate in the program. The states scheduled to receive the training are listed on the BTF website: www.braintrauma.org. To initiate and coordinate each state-wide program, BTF prefers to work through the State EMS Bureau. Trainers certified to teach on EMS topics are invited to take one of the Instructor Courses scheduled around the State. The support and guidance of the regional medical directors is sought from the start. CEUs or other educational credits for EMTs are awarded through the State EMS office. CMEs for physicians and nurses are arranged through BTF. The instructors who complete the course become vital partners with BTF in reaching other prehospital personnel in their region and in conducting a series of provider courses. They may register with BTF to obtain free materials for their students.

At no cost to the participating EMS systems, BTF provides:

- highly-qualified professionals to train the medical directors, instructors, EMT-trainers and, occasionally, trauma nurses in each state;
- extensive educational and training materials;
- reimbursement for various expenses, as agreed upon in advance with each state;
- certificates of course completion; and
- updates on evidence-based TBI care, prehospital research, and specific changes in the management of TBI curriculum.

For further information on the EMS program, please contact:

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Curriculum and Supplementary Materials for Instructors

Using the scientific, evidence-based protocols, *Guidelines for Prehospital Management of Traumatic Brain Injury* as a base, the course covers:

- research methodology/guideline development
- specific scientific findings
- assessment techniques related to oxygenation, blood pressure, GCS and pupils
- treatment procedures: airway, ventilation & oxygenation; fluid resuscitation; medications
- triage and hospital transport decisions

The participant will learn to rapidly identify and treat a TBI patient at the scene and in the ambulance, plus the techniques for teaching this information to field providers at all levels. Primary focus will be on severe TBI adult and pediatric patients with a Glasgow Coma Scale score of 3 to 8. Each instructor who participates in the course will receive a certificate of completion and a binder that contains the following information:

- a course schedule and introduction to TBI
- slides of instructor course
- provider course with speaker notes and student handout
- algorithms, practice exercises, case scenarios
- aids for scoring the GCS and pupil exams
- pre-and post-tests, evaluation forms
- procedures for scheduling provider classes.

Each kit also holds a CD-ROM that contains instructions on its use, the *Guidelines for the Management of Severe Head Injury*, the *Guidelines for Prehospital Management of Traumatic Brain Injury*, PowerPoint slide presentation and Speaker Notes for Provider Course, two training videos (the 9:12 minute "Prehospital Management of Traumatic Brain Injury: An Overview" and the 21:53 minute "Prehospital Management of Traumatic Brain Injury: Assessment, Treatment and Transport") and general information on adult learning. An audiocassette is supplied for use in ventilation rates practice.